

AMENDMENTS TO THE CLAIMS

Cancel Claims 9, 12-16, 26 and 27 without prejudice. Please accept amended Claim 8 and new Claims 33-46 as follows.

Listing of claims.

1-7. (Canceled)

8. (Currently Amended) A liquid crystal display apparatus comprising:

~~an upper substrate having a color pixel, the color pixel having a first thickness at a position corresponding to a first area and a second thickness at a position corresponding to a second area, which is thicker than the first thickness;~~

~~a lower first substrate having a first area and a second area;~~

~~a switching device formed on the first substrate;~~

~~, an organic a first insulating layer formed on the switching device in the first area,~~

~~a pixel electrode formed on the organic first insulating layer and connected to a drain electrode of the switching device, and a reflecting plate formed on the pixel electrode with a transmission window the reflecting plate has an edge partially extended to the second area; and~~

~~a second insulating layer formed on the pixel electrode and in the first area;~~

~~a reflecting plate formed on the second insulating layer;~~

~~a second substrate facing the first substrate; and~~

~~a liquid crystal layer interposed between the upper first and lower second substrates; and including liquid crystal molecules rubbed along a predetermined direction,~~

~~wherein the transmission window is define by at least three sides of the reflecting plate, and a portion of a first side of the three sides and a portion of a second side adjacent to the first side of the three sides are extended to be connected with the pixel electrode,~~

~~wherein the color pixel directly contacts the upper substrate without an intervening layer throughout the first area and the second area, and a boundary between the first thickness and the second thickness of the color pixel substantially coincides with a boundary between the first area and the second area the reflecting plate partially overlaps with the second area.~~

9-16. (Canceled)

17. (Previously Presented) In a liquid crystal display apparatus that displays an image using an artificial light or a natural light passing through a liquid crystal layer, the liquid crystal display apparatus comprising:

a first substrate;

a switching device formed in a pixel area that is defined by a gate line and a source line disposed on the first substrate, the gate line extended in a first direction and arranged in a second direction substantially perpendicular to the first direction, the source line extended in the second direction and arranged in the first direction;

a pixel electrode connected to a drain electrode of the switching device;

a reflecting plate disposed on the pixel electrode wherein the pixel electrode has a first height at a first area and a second height at a second area, wherein the first height is greater than the second height with respect to the first substrate, and wherein the reflecting area has a first edge extended into the second area;

an insulating layer formed on the switching device and the first substrate with a first contact hole through which the drain electrode is partially exposed;

an organic insulating layer formed on the first area with a second contact hole corresponding to the first contact hole so as to expose the drain electrode; and

an protecting layer formed on the pixel electrode connected to the drain electrode through the second and first contact holes,

wherein the reflecting plate is formed on the protecting layer.

18. (Canceled)

19. (Previously Presented) The liquid crystal display apparatus of claim 17, further comprising:

a second substrate; and

a color pixel disposed on the second substrate, the color pixel having a first thickness at a position corresponding to the first area and a second thickness at a position corresponding to the second area, which is thicker than the first thickness,

wherein the liquid crystal layer is disposed between the first and second substrates, and has a first thickness at the position corresponding to the first area and a second thickness at the position corresponding to the second area, which is thicker than the first thickness.

20. (Original) The liquid crystal display apparatus of claim 19, further comprising:

a first alignment layer formed on the reflecting plate and rubbed in a first direction so as to align the liquid crystal layer; and

a second alignment layer formed on the color pixel and rubbed in a second direction opposite to the first direction so as to align the liquid crystal layer, wherein the liquid crystal layer is aligned in a homogeneous alignment state by the first and second alignment layers.

21. (Previously Presented) In a liquid crystal display apparatus that displays an image using an artificial light or a natural light passing through a liquid crystal layer, the liquid crystal display apparatus comprising:

a first substrate;

a switching device formed in a pixel area that is defined by a gate line and a source line disposed on the first substrate, the gate line extended in a first direction and arranged in a second direction substantially perpendicular to the first direction, the source line extended in the second direction and arranged in the first direction, and the switching device having a gate electrode extended from the gate line, a source electrode extended from the source line and a drain electrode spaced apart from the source electrode;

an insulating layer formed on the switching device and the first substrate with a contact hole through which the drain electrode is partially exposed;

a pixel electrode partially formed on the insulating layer, and connected to the drain electrode through the contact hole;

an organic insulating layer formed on the insulating layer and the pixel electrode in a first area to expose the pixel electrode corresponding to a second area;

a protecting layer formed on the organic layer corresponding to the first area; and

a reflecting plate disposed on the protecting layer, the reflecting plate having a first edge extended to the second area to connect the reflecting plate to the pixel electrode.

22. (Previously Presented) The liquid crystal display apparatus of claim 21, further comprising:

a second substrate; and

a color pixel disposed on the second substrate, the color pixel having a first thickness at a position corresponding to the first area and a second thickness at a position corresponding to the second area, which is thicker than the first thickness,

wherein the liquid crystal layer is disposed between the first and second substrates, and has a third thickness at the position corresponding to the first area and a fourth thickness at the position corresponding to the second area, which is thicker than the third thickness.

23. (Original) The liquid crystal display apparatus of claim 21, further comprising:

a first alignment layer formed on the reflecting plate and rubbed in a first direction; and

a second alignment layer formed on the color pixel and rubbed in a second direction opposite to the first direction,

wherein the liquid crystal layer is aligned in a homogeneous alignment state by the first and second alignment layers.

24. (Original) The liquid crystal display apparatus of claim 21, wherein a width of the pixel electrode in the first direction is substantially equal to or smaller than a width of the pixel area in the first direction.

25. (Original) The liquid crystal display apparatus of claim 21, wherein widths of the pixel electrode in the first and second directions are substantially equal to or smaller than widths of the pixel area in the first and second directions, respectively.

26-27. (Canceled)

28. (Previously Presented) The array substrate of claim 17, wherein the edge of the reflecting plate is extended from two sides of a transmissive window.

29. (Previously Presented) The array substrate of claim 28, wherein a length of the edge of the reflecting plate is about 8 μm .

30. (Previously Presented) The array substrate of claim 21, wherein the first edge of the reflecting plate is extended from two sides of a transmissive window.

31. (Previously Presented) The array substrate of claim 30, wherein a length of the first edge of the reflecting plate is about 8 μm .

32. (Canceled)

33. (New) The liquid crystal display apparatus of claim 8, wherein the pixel electrode is electrically connected to the switching device through a contact hole that is formed through the first insulating layer.

34. (New) The liquid crystal display apparatus of claim 8, further comprising:
a third insulating layer formed between the pixel electrode and the reflecting plate.

35. (New) The liquid crystal display apparatus of claim 8, further comprising:
a third insulating layer formed on the second insulating layer.

36. (New) The liquid crystal display apparatus of claim 8, wherein a portion of the reflecting plate makes contact with the pixel electrode in the second area.

37. (New) The liquid crystal display apparatus of claim 8, wherein the reflecting plate overlaps with at least one of the lower and right sides of the second area in a plan view, when a rubbing direction of the liquid crystal molecules is in about ten o'clock on the first substrate.

38. (New) The liquid crystal display apparatus of claim 8, wherein the reflecting plate overlaps with the lower side of the second area in a plan view, when a rubbing direction of the liquid crystal molecules is in about twelve o'clock on the first substrate.

39. (New) The liquid crystal display apparatus of claim 8, wherein reflecting plate overlaps with at least one of the lower and left sides of the second area in a plan view, when a rubbing direction of the liquid crystal molecules is in about one o'clock on the first substrate.

40. (New) The liquid crystal display apparatus of claim 8, wherein the second substrate includes a color pixel having first thickness in the first area and second thickness in the second area, and the first thickness is different from the second thickness.

41. (New) An array substrate comprising:

a substrate having a first area and a second area;

a switching device formed on the substrate;

a first insulating layer formed on the switching device;

a second insulating layer formed on the first insulating layer and in the first area;

a pixel electrode formed on the first insulating layer and connected to the switching device;

a third insulating layer formed on the second insulating layer; and

a reflecting plate formed on the third insulating layer,

wherein the reflecting plate is formed in the first area.

42. (New) The array substrate of claim 41, wherein a portion of the reflecting plate is formed in the second area.

43. (New) The array substrate of claim 41, wherein a portion of the third insulating layer is formed in the second area.

44. (New) The array substrate of claim 41, wherein the third insulating layer is formed only in the first area.

45. (New) The array substrate of claim 41, wherein the pixel electrode is electrically connected to the switching device through a contact hole that is formed through the first insulating layer.

46. (New) The array substrate of claim 41, wherein the pixel electrode is electrically connected to the switching device through a contact hole that is formed through the second insulating layer.